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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,818	09/23/2005	Michel Baylot	33900-183PUS	1789

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EXAMINER	
VENNE, DANIEL V	

ART UNIT	PAPER NUMBER
3617	

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02/23/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/550,818	BAYLOT ET AL.	
	Examiner	Art Unit	
	DANIEL V. VENNE	3617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 January 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *38-78* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *49-74* is/are allowed.

6)☒ Claim(s) *39-48 and 75-78* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 September 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This application was transferred from an examiner who has left the USPTO

1. An amendment was received from applicant on 1/21/2010.

2. No claims are amended.

3. Claims 1-37 are canceled.

4. Claims 38-78 are remaining in the application.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 38-45, 47, 48, 75 and 77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bennett (US 4183316). Bennett discloses an underwater buoyancy element [12], comprising a casing [18] (membrane within a compartment which is the volume encompassed by structure (chamber) [14] that is immersed in water) and a buoyancy fluid [16] having a density that is less than that of seawater, and that is confined in and entirely filling the casing (which includes chamber [14] and membrane [18]). Bennett does not explicitly disclose that the buoyancy fluid is a quasi incompressible fluid (which according to applicant's specification is a fluid for which its volume does not vary significantly when the depth of water and thus the pressure increases naturally in a gaseous state at ambient atmospheric temperature and pressure) and naturally in an entirely liquid state at the underwater depth to which the

buoyancy element is immersed, nor does Bennett explicitly disclose the compressibility, depth limitations or the specific fluid characteristics recited. However, it is noted that applicant discloses in paragraphs [0022] and [0023] of the published application that the buoyancy fluid is a known compound commonly referred to as liquefied gas, and also discloses in paragraph [0035] of the published specification that the compounds selected for the fluid are easily available on the market. Therefore, it would have been obvious to provide a known fluid of commonly available compounds with Bennett to create the invention as claimed by applicant. The rationale would have been to utilize a fluid of predictable characteristics from common compounds of known and predictable physical and chemical properties that would to provide the expected results of providing a reliable buoyancy fluid for the underwater buoyancy element that would be naturally in a gaseous state at ambient atmospheric temperature and pressure, and naturally in an entirely liquid state at the underwater depth to which the buoyancy element is immersed; the specific compounds and properties recited for the fluid would be considered obvious as a matter of engineering design choice depending on the specific performance characteristics and operating parameters desired for the fluid and element.

7. Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bennett (US 4183316), in view of Leonard et al. (US 6772705 B2). Bennett discloses all claimed features as indicated above, with the exception of an immersed structure suspended from the buoyancy element by at least one cable. Bennett shows an object [10] suspended from the buoyancy element [12] and indicates only that the object is joined to the buoyancy element, but is silent on the means of joining or suspending the

object. Leonard et al. discloses use of cables [11] for suspending an object [12] from a buoyancy element [14]. Therefore, it would have been obvious to provide at least one cable to suspend the object to the buoyancy element as an alternative means to join the object to the buoyancy element to create the invention as claimed by applicant. The rationale would have been to utilize a known means in a predictable fashion to provide the expected results of reliably suspending an object from the buoyancy element.

8. Claims 76 and 78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bennett (US 4183316). Bennett discloses all claimed features as indicated above, with the exception of the underwater depth to which the buoyancy element is to be immersed is no less than about 1000 meters. The underwater depth of the element is not a structural feature of the claimed invention and is an intended use statement which carries very little patentable weight. It would have been obvious to one of ordinary skill in the art to which the subject matter pertains to make the underwater depth any particular depth to suit the depth of water for the element would be used and the particular depth to which the element would be used would be obvious to one of ordinary skill in the art as a matter of design choice depending on the structural limitations of the element and the particular depth for which the element would be deployed for the service intended.

Allowable Subject Matter

9. Claims 49-74 are allowed.

Response to Arguments

10. Applicant's arguments filed on 1/21/2010 with respect to the 35 USC § 103 rejection of claims have been fully considered; however, they are not persuasive.

Regarding applicant's arguments that the examiner has not provided a valid reason for combining Bennett with known prior art; the examiner has provided a clear rationale as indicated above and here again below for making such a combination. A motivation for combining is not necessary, only a clear rationale, please see below.

Regarding applicant's argument that the above rejection which combines Bennett with applicant's admitted prior art is improper; applicant admits that the buoyancy fluid is a known compound commonly referred to as liquefied gas, and that the compounds selected for this fluid are readily available; therefore, it would have been obvious to one of ordinary skill as further indicated in the rejection above to provide such a known fluid with Bennett. Bennet provides the buoyancy element casing, and combining Bennet such that a known compound with predictable properties would be confined in and fill the casing would provide the expected results of reliably controlling the buoyancy of the element when immersed in seawater. The rejection combines known features in a predictable fashion to achieve expected results. For these reasons, the 35 USC § 103 rejection of the claims presented above is deemed valid and is not withdrawn.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the

references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, combining a known compound with predictable properties with a known casing of a buoyancy element would have been obvious to one of ordinary skill in the art to provide the expected results discussed above. Such a combination provides the expected results of utilizing the known properties of the claimed fluid in a predictable fashion to predictably control the buoyancy of a submerged buoyancy element with a casing. It would have been obvious to one of ordinary skill in the art to modify the buoyancy element such that it would contain the known fluid and predictably control buoyancy, such that the combined fluid used in Bennet is replaced with the fluid of predictable properties admitted by applicant as known in the art.

Regarding applicant's argument that Bennett teaches away from using a "quasi-incompressible fluid" as defined by applicant to main the buoyancy of the submerged object because the working fluid [16] expands and contracts is not persuasive, since the working fluid of Bennett would be replaced by the known quasi-incompressible fluid as defined by applicant, as explained in the rejections above. Such a combination would provide the expected result of controlling buoyancy of the submerged object without using the working fluid disclosed in Bennett. Bennett would provide the casing in such a combination. The admitted prior art of applicant which describes the known quasi-incompressible fluid properties supports the position of using such a fluid instead of the fluid disclosed by Bennett which would provide the same function of reliably controlling

buoyancy of the submerged object. In addition, applicant's argument that Bennett does not disclose a quasi incompressible fluid is moot because the fluid indicated in applicant's specification as known prior art can be combined with Bennett as indicated above such that the fluid of Bennett can be replaced with the known fluid admitted by applicant as prior art to create the invention as claimed by applicant.

In view of the foregoing, the combination of Bennett with the known fluid admitted as prior art by applicant would be considered obvious at the time the invention was made to one of ordinary skill in the art to which the subject matter pertains. The rejections combine known features in a predictable fashion to achieve expected results.

Therefore, the rejections presented are considered valid and are not withdrawn.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The non-final office action mailed on 9/21/2009 inadvertently noted in the conclusion that that office action is a final office action; that office action is non-final. The office action summary also incorrectly indicated that claims 38-78 are rejected. The office action summary should have indicated that claims 38-48 and 75-78 are rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel V. Venne whose telephone number is (571) 272-7947. The examiner can normally be reached between 7:30AM - 4:00PM.
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samuel J. Morano can be reached on (571) 272-6684. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Daniel V Venne/ 2/22/2010

Examiner, Art Unit 3617